EPA Technical Meetings: Action Item Summary – REVISED FOR PREFERRED ALTERNATIVE 4A – March 23, 2015

Compilation from meetings held with technical staff on Nov 10, 13, and 24 of 2014, and Jan 12, 2015. Meetings included staff from EPA, DWR, USBR, NMFS, USFWS, and ICF.

Meeting #1: November 10, 2014

- ICF will complete an analysis of downstream (including San Francisco Bay) effects including sediment loads and tidal impacts for addition to BDCP Section 5.3, Ecosystems and Landscapes. ICF will include similar information in the SDEIS to capture the ecosystem-level changes.
    - Please see Appendix A, Chapter 11, Section 11.3.5, *Impacts Applicable Across Multiple Alternatives*, Impacts AQUA-218 and AQUA-220
- EPA thinks all the alternatives should be evaluated against a broad ecosystem indicator so their relative benefits and costs can be discerned. ICF will augment and clarify Section 5.3 to acknowledge X2 as a broad ecosystem indicator, include any relevant ecosystem-level analyses that can be used to describe changes due to BDCP, and discuss habitat contiguity and integrity. EPA asked to review this material before the SDEIS is published.
    - Pending further discussion based on EPA review (not sure how this fits into a NEPA context now that the BDCP is not being recirculated).
- EPA will review the revised Section 5.3 to determine if the analyses address its concerns. ICF will describe any contribution that the BDCP will make toward the overall flow needs of the Bay Delta, and describe the benefits of BDCP and the limits to BDCP's benefits in the context of overall needs, and how this contribution compares to the flow needs of the ecosystem as articulated by scientists.[1] DWR will share this write-up with EPA before publishing the SDEIS.
- ICF will describe the BDCP's relationship to the Clean Water Act and SWRCB's comprehensive update of the Bay Delta WQCP. This includes updating and reconciling the many, varying, descriptions of SWRCB's process in the DEIS for the sake of consistency. DWR will share this write-up with EPA before publishing the SDEIS.
    - Additional text related to this will be added in Appendix A, Chapter 1, as well as Section 4.1 (note: this did not appear in the April 1 administrative draft)
- ICF will develop text to explain the modeled impacts re: frequency of deadpool conditions that would occur in reservoirs due to climate change assumptions about changes in the timing of precipitation in the absence of changed flood control curves. This will be included in the Supplement and/or Final DEIS.

[1] Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem Prepared Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009, (2010 Flows Report), available at http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/final_rpt080310.pdf
Dibble, C. and Water Branch. Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta. California Department of Fish and Game; 11/23/2010.
Final Draft Restoration Plan for the Anadromous Fish Restoration Program: A Plan to Increase Natural Production of Anadromous Fish in the Central Valley of California; http://www.fws.gov/stockton/afrp/rationale.cfm

    - This text is forthcoming and will be provided to EPA once it has been prepared.
- Jim Moose (RMM, LLC) is drafting a scope of work for additional discussion of the uncertainties associated with the no action alternative (NAA). This discussion may be a stand-alone section or an integrated part of the SDEIS. The Final EIS will include a "master response" concerning operational changes to the CVP.
    - This will likely be provided primarily in the FEIR/FEIS.
- Reclamation will identify Preferred Alternative.
    - This decision is pending, but is anticipated to occur prior to release of the RDEIR/SDEIS
- For each impact statement, include a CEQA and NEPA conclusion.
    - For Alternative 4A, this has been provided in Section 4.3.7, Fish and Aquatic Resources. For other alternatives, this is in progress and will be incorporated into Appendix A, Chapter 11, Section 11.3.5, *Impacts Applicable Across Multiple Alternatives*
- DWR/ICF will clarify what methods were used to reach conclusions.
    - Please see Appendix A, Chapter 11, Section 11.3.2, *Methods for Analysis* (Subsection *Methodology used for Reaching a Conclusion for the BDCP EIR/S for Fish Impacts Related to Water Operations* and *Methodology to Determine Downstream Impacts of Restoration*)
- DWR/ICF will add text to Chapter 11 (methods) to clearly describe the decision process that was used to reach conclusions (same as for Topic 3). EPA requests reviewing this section before it is published in the SDEIS.
    - Please see Appendix A, Chapter 11, Section 11.3.2, *Methods for Analysis* (same subsection as referenced above)
- EPA (Paul Jones) will review handout provided by David Zippin.
- DWR/ICF will clarify the effects determinations for the beneficial uses that will be affected by the proposed project
    - For Alternative 4A, this has been provided in Section 4.3.4
- DWR/ICF will add the following to the SDEIS:
    - greater detail about the process for designing 'state of the art' fish screens and the current assumptions pertaining to design (mesh size, sweeping and approach velocities, etc.); and
    - This has been added in Appendix A, Chapter 3, Section 3.6.1.1

Meeting #2: November 13, 2014

- DWR/ICF will share results of ELT WQ modeling with EPA when they are available.
    - These are provided for Alternative 4A in Section 4.3.4 and in Section B.4 of Appendix B

- DWR/ICF will clarify in the SDEIS the relationship between the BDCP and the Bay Delta WQCP, and will reconcile conflicting descriptions of the project and the process, respectively, in various chapters of the SDEIS.
    - Additional text related to this will be added in Appendix A, Chapter 1, as well as Section 4.1 (note: this did not appear in the April 1 administrative draft)
- The flow-related questions in Table 3 of D-1641 were discussed previously. EPA will review the administrative draft RDEIR/SDEIS and provide comments.
    - This text is forthcoming and will be provided to EPA once it has been prepared.

Meeting #3: November 24, 2014

- Regarding **selenium** (SDEIS):
    - Provide context for current contaminant sources, potentially increased residence times in the estuary, and associated processes.
    - Work with USFWS to describe the impacts of potential increased risk of exposure for each sensitive fish species to increased concentrations of selenium related to implementation of BDCP (similar to green sturgeon language in the Public Draft).
        - Please see Section 4.3.7, Fish and Aquatic Resources (Impact AQUA-8: Effects of Construction of Water Conveyance Facilities on Delta Smelt, Impact AQUA-26: Effects of Contaminants Associated with Restoration Measures on Longfin Smelt, Impact AQUA-44a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Winter-Run ESU), Impact AQUA-62: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Spring-Run ESU), Impact AQUA-80: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Fall-/Late Fall–Run ESU), Impact AQUA-98: Effects of Contaminants Associated with Restoration Measures on Steelhead, Impact AQUA-116: Effects of Contaminants Associated with Restoration Measures on Sacramento Splittail, Impact AQUA-134: Effects of Contaminants Associated with Restoration Measures on Green Sturgeon, Impact AQUA-152: Effects of Contaminants Associated with Restoration Measures on White Sturgeon, Impact AQUA-170a: Effects of Contaminants Associated with Restoration Measures on Pacific Lamprey, Impact AQUA-188: Effects of Contaminants Associated with Restoration Measures on River Lamprey)
        - Please see Appendix A, Chapter 11, Section 11.3.5, *Impacts Applicable Across Multiple Alternatives* (Impact AQUA-219: Effects of Operations on Contaminants on Covered Species, Impact AQUA-8a Effects of Contaminants Associated with Restoration Measures on Delta Smelt, Impact AQUA-26a: Effects of Contaminants Associated with Restoration Measures on Longfin Smelt, Impact AQUA-44a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Winter-Run ESU), Impact AQUA-

62a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Spring-Run ESU), Impact AQUA-80a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Fall-/Late Fall–Run ESU), Impact AQUA-98a: Effects of Contaminants Associated with Restoration Measures on Steelhead, Impact AQUA-116a: Effects of Contaminants Associated with Restoration Measures on Sacramento Splittail, Impact AQUA-134a: Effects of Contaminants Associated with Restoration Measures on Green Sturgeon, Impact AQUA-152a: Effects of Contaminants Associated with Restoration Measures on White Sturgeon, Impact AQUA-170a: Effects of Contaminants Associated with Restoration Measures on Pacific Lamprey, Impact AQUA-188a: Effects of Contaminants Associated with Restoration Measures on River Lamprey, Impact AQUA-206a: Effects of Contaminants Associated with Restoration Measures on Non-Covered Aquatic Species of Primary Management Concern)

- Conduct updated water column modeling (including downstream effects), and review literature.
  - Please see Section 4.3.4 regarding Alternative 4A, and Appendix A, Chapter 8, Impacts WQ-25 and WQ-26, and Appendix 8M
- Consider revisiting policy decision regarding in-Delta results and downstream effects to characterize impact conclusions in the DEIS.
- Better integrate/cross-reference Chapters 8 and 11 of DEIS, including linkage between water quality modeling results and biological effects for each covered species.
- Determine appropriate place in Chapters 11 and 12 to call out CM1-related impacts specific to contaminants.
  - Please see Section 11.3.5, *Impacts Applicable Across Multiple Alternatives* (Impact AQUA-219: Effects of Operations on Contaminants on Covered Species).
- Determine potential for cumulative impacts associated with San Pablo Bay refineries and interactions with BDCP-related San Joaquin River flows.
  - This text is forthcoming and will be provided to EPA once it has been prepared.
- In the Supplemental or Final EIS, revise text based on potential updates from EPA regarding expected changes in water quality standards, including potential splittail bioaccumulation modeling.
  - Please see Appendix A, Chapter 8, *Water Quality*, for detailed discussion of water quality standards and contaminant concentrations and distributions.
  - Bioaccumulation in two fish species was modeled: largemouth bass and green sturgeon. Largemouth bass was modeled primarily because it is the only species for which fish tissue data were available from representative locations throughout the Delta (including wet and dry years), so fish tissue and water data could be used to develop relationships between water and

fish concentrations. Also, because largemouth bass is a voracious, high-level consumer relative to the covered fish species, it will show effects of bioaccumulation, and is a reasonable surrogate for covered species that are pelagic-based feeders. The largemouth bass model approach is fully described in Appendix 8M (within Appendix A).

- Green sturgeon model results also apply to white sturgeon. However, when applying results to splittail, the other benthic feeding fish evaluated, the lower trophic position of splittail must be considered. Since lower trophic levels tend to bioaccumulate selenium at a lower rate, effects are likely not substantial for that species.
- Please see Appendix A, Chapter 11, Section 11.3.5, *Impacts Applicable Across Multiple Alternatives* (Impact AQUA-218: Changes in Sediment Loading in Downstream Bays as a Result of Operations)
- Please see Impact AQUA-116a: Effects of Contaminants Associated with Restoration Measures on Sacramento Splittail, for further discussion of effects of contaminants on splittail with BDCP

- Regarding **mercury** (SDEIS): The following action items will be addressed in the context of a performance standard for restoration.
    - Add context of Yolo Bypass risks for CM2 and work with USFWS to describe how changes in mercury concentrations related to implementation of the BDCP will affect each covered species.
        - Please see Appendix A, Chapter 11, Section 11.3.5, *Impacts Applicable Across Multiple Alternatives* [Impact AQUA-8a Effects of Contaminants Associated with Restoration Measures on Delta Smelt, Impact AQUA-26a: Effects of Contaminants Associated with Restoration Measures on Longfin Smelt, Impact AQUA-44a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Winter-Run ESU), Impact AQUA-62a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Spring-Run ESU), Impact AQUA-80a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Fall-/Late Fall–Run ESU), Impact AQUA-98a: Effects of Contaminants Associated with Restoration Measures on Steelhead, Impact AQUA-116a: Effects of Contaminants Associated with Restoration Measures on Sacramento Splittail, Impact AQUA-134a: Effects of Contaminants Associated with Restoration Measures on Green Sturgeon, Impact AQUA-152a: Effects of Contaminants Associated with Restoration Measures on White Sturgeon, Impact AQUA-170a: Effects of Contaminants Associated with Restoration Measures on Pacific Lamprey, Impact AQUA-188a: Effects of Contaminants Associated with Restoration Measures on River Lamprey, Impact AQUA-206a: Effects of Contaminants Associated with Restoration Measures on Non-Covered Aquatic Species of Primary Management Concern) for discussion of mercury concentration impacts to

each covered species. Effects of Yolo Bypass restoration are discussed in detail under Impact AQUA-8a Effects of Contaminants Associated with Restoration Measures on Delta Smelt and Impact AQUA-44a: Effects of Contaminants Associated with Restoration Measures on Chinook Salmon (Winter-Run ESU)].

- Describe ongoing DWR modeling and study efforts (in the Final EIS).
  - Please see Appendix D, Section D.3.2.6
- Revise CM12 into two groups: one addressing floodplain concerns and one addressing tidal habitat issues; confirm that CM12 is a menu of options, and potentially add options based on DWR efforts.
  - Please see Appendix D, Section D.3.2.6
- Add to CM4 design criteria for restoring wetlands to achieve multiple goals such as reversal of subsidence, sequestration of carbon and mercury, levee stabilization, and maintaining channel geometry and tidal energy so that X2 (low salinity zone) can be managed to increase the abundance and survival of resident fishes.
  - Please see Appendix D, Section D.3.2.6
- Describe appropriate uses of clean dredged material within the Delta, and discuss its potential to exacerbate subsidence on peat-based soils.
  - This text is forthcoming, but will be included in revisions to Appendix 3B (within Appendix A)
- Potential policy decision regarding impact conclusions (EIS).
- Commitment to consider historical ecology in design and latest ecological principles.

- DWR/ICF will explain the logic chain in the SDEIS for reaching conclusions in Ch. 11 (applies to selenium and mercury, and more broadly to other issues).
  - Please see Appendix A, Chapter 11, Section 11.3.2, *Methods for Analysis*
- DWR/ICF will outline methods used to estimate potential temperature impacts and add a rationale for not using daily models;
- EPA will have an offline conversation with NMFS (Cathy M.) regarding the use of EPA's Water Temperature Guidance for salmon.[2]
- DWR/ICF will add an explanation in Chapter 5 and Appendix 5A that UWMPs have been reviewed, and are consistent with the assumptions used in BDCP modeling (full use of contract amounts) and with 20 x 2020 standards.
  - This text is forthcoming and will be provided to EPA once it has been prepared.
- EPA will review Attachment D5 to Appendix 5A (sensitivity analyses relating to habitat footprints) and potentially the Suisun Marsh Plan, and will report if additional discussion is needed.

Meeting #4: January 12, 2015

- As identified in Technical Meetings 1-3, ICF is working on several action items that will improve the 'logic chain' between analyses and conclusions.

[2] http://yosemite.epa.gov/r10/water.nsf/1887fc8b0c8f2aee8825648f00528583/ce95a3704aeb5715882568c400784499

- ICF will review description of operations in documents and provide additional detail.
- DWR will provide a response to EPA regarding the USACE permit.
- DWR will have CH2 contact EPA to discuss application of E/I ratio in BDCP modeling.

EPA Note: Some of these notes refer to "agreements" or "conclusions." At this point, EPA is responding to tentative proposals for revisions suggested by the lead agencies or its consultants. Any agreements or conclusions referenced in this document are similarly tentative. EPA will base its Section 309 review on the actual released contents of the public revised DEIS and/or supplemental DEIS (whichever approach is taken).